

**BTECH**  
**(SEM III) THEORY EXAMINATION 2021-22**  
**BIOCHEMISTRY**

Time: 3 Hours

Total Marks: 70

Notes:

- Attempt all Sections and Assume any missing data.
- Appropriate marks are allotted to each question, answer accordingly.

<b>SECTION-A</b> Attempt All of the following Questions in brief		Marks (7X2=14)
Q1(a)	What is pH scale?	
Q1(b)	Explain Mutarotation of Carbohydrate?	
Q1(c)	What triggers lipid metabolism?	
Q1(d)	What are 4 types of proteins?	
Q1(e)	What happens in de novo synthesis?	
Q1(f)	How are amino acids used in metabolism?	
Q1(g)	What is the deficiency of lipid called as?	

<b>SECTION-B</b> Attempt ANY THREE of the following Questions		Marks (3X7=21)
Q2(a)	How do you calculate Henderson Hassel Balch equation? Mechanism of acidic and basic buffer?	
Q2(b)	Metabolism of Nucleotides: Purines & Pyrimidines synthesis	
Q2(c)	Synthesis of aspartate with all carbon atoms coming from pyruvate or CO <sub>2</sub> .	
Q2(d)	What are the organic chemical groups that compose carbohydrates? How are carbohydrates classified according to the presence of those groups?	
Q2(e)	Explain the Formation and utilization of ketone bodies.	

<b>SECTION-C</b> Attempt ANY ONE following Question		Marks (1X7=7)
Q3(a)	Explain the Hemoglobin Buffer and Amino acid Buffer & System.	
Q3(b)	Explain Weak Acids, and Weak Bases Buffers and buffering mechanism.	

<b>SECTION-C</b> Attempt ANY ONE following Question		Marks (1X7=7)
Q4(a)	Explain the Gluconeogenesis, Pentose Phosphate Pathway	
Q4(b)	What is the Carbohydrates and classification, structure and functions of monosaccharides, disaccharides and polysaccharides? <a href="https://www.aktuonline.com">https://www.aktuonline.com</a>	

<b>SECTION-C</b> Attempt ANY ONE following Question		Marks (1X7=7)
Q5(a)	What is the Fats and lipids and Classification, structure and function?	
Q5(b)	How Fatty acid synthesis, origin of acetyl-Co A for fat synthesis, Elongation & desaturation of Fatty Acids.	

<b>SECTION-C</b> Attempt ANY ONE following Question		Marks (1X7=7)
Q6(a)	Explain the Ramachandran plot, Primary, secondary, tertiary & quaternary structure of proteins.	
Q6(b)	Explain of the Biodegradation of amino acids:	

<b>SECTION-C</b> Attempt ANY ONE following Question		Marks (1X7=7)
Q7(a)	Explain Structure and properties Purines and pyrimidines base.	
Q7(b)	Explain the preparation of purines and pyrimidines metabolism.	